

ABSTRACT OF THE DISCLOSURE

A heterogeneous integrated circuit having a digital signal processor and at least one programmable logic core. An AMBA AHB couples the cores and most other functional units on the IC. The PLCs are also coupled to the DSP through a separate DMA sharing unit to the DSP, and particularly to the DSP memory. The memory sharing arrangement provides a separate high-speed data transfer mechanism between the PLCs and the DSP. Memory sharing is controlled to allocate the full bandwidth of the DSP memory to the PLCs and other DMA devices in proportion to their operating speeds. The AMBA AHB allows the DSP to control the PLC operations without interference with high-speed data transfers.